

XXVIII. YA1075 (ver. 2003)

peridotite

55 grams

Introduction

Yanai (2002) reported an apparent Martian meteorite found among a collection of diogenites. The sample has a dark green color and is partly covered by a shiny-black fusion crust.

The official status of this small sample is in question (Kojima, personal communication).

Petrography

The texture and mineralogy of YA1075 appears to be similar to ALH77005. Large pyroxene grains poikilitically enclose small rounded olivine phenocrysts. The mesostasis contains maskelynite and opaques.

Mineral Chemistry

Olivine: The composition of olivine ranges from Fo₆₇₋₇₄.

Pyroxenes: The composition of the host pyroxene ranges from En₇₃₋₇₇ Wo_{2.5-5}. Small grains of augite En₄₇₋₅₂ Wo₃₂₋₃₈ appear as small grains in the host pyroxene.

Maskelynite: The plagioclase (An₅₀) is shocked. *Note that the plagioclase composition is unlike that of diogenites.*

Whole-rock Composition

None reported.

Other Isotopes

Oxygen isotopes as determined by Clayton (reported by Yanai 2002) are $\delta^{18}\text{O} = +3.95\text{‰}$ and $\delta^{17}\text{O} = +2.23\text{‰}$ (with $\Delta^{17}\text{O} = +0.18\text{‰}$).